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Colby

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(54) **QUANTUM DOT DIGITAL RADIOGRAPHIC DETECTION SYSTEM**

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See application file for complete search history.

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(57) **ABSTRACT**

A digital quantum dot radiographic detection system described herein includes: a scintillation subsystem **202** and a semiconductor visible light detection subsystem **200**, **200'** (including a plurality of quantum dot image sensors **200***a*, **200***b*). In a first preferred digital quantum dot radiographic detection system, the plurality of quantum dot image sensors **200** is in substantially direct contact with the scintillation subsystem **202**. In a second preferred digital quantum dot radiographic detection system, the scintillation subsystem has a plurality of discrete scintillation packets **212***a*, **212***b*, at least one of the discrete scintillation packets communicating with at least one of the quantum dot image sensors. The quantum dot image sensors **200** may be associated with semiconductor substrate **210** made from materials such as silicon (and variations thereof) or graphene.

29 Claims, 14 Drawing Sheets